

PI 1179136

REC'D 09 JUN 2004

WIPO

PCT

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

June 03, 2004

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM  
THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK  
OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT  
APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.

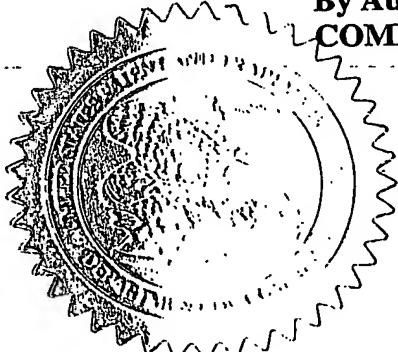
APPLICATION NUMBER: 10/389,733

FILING DATE: *March 14, 2003*

RELATED PCT APPLICATION NUMBER: PCT/US04/07746

BEST AVAILABLE COPY

By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS



*M. Tarver*

M. TARVER  
Certifying Officer

PRIORITY  
DOCUMENT

SUBMITTED OR TRANSMITTED IN  
COMPLIANCE WITH RULE 17.1(a) OR (b)

03/14/03  
J1051 U.S. PTO

Please type a plus sign (+) inside this box

03-17-03 10389733 . 031403 A  
PTO/SB/05 (11-00)

Approved for use through 10/31/2002, OMB 0851-0032  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**UTILITY  
PATENT APPLICATION  
TRANSMITTAL**

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. 040102-000100US

First Inventor Andrew Citrynell

Title REMOVABLE COOLING DEVICE AND INTEGRATED VESSELS

Express Mail Label No. EL889371545US

APPLICATION ELEMENTS		ADDRESS TO	
See MPEP chapter 600 concerning design patent application contents.			
1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) <i>(Submit an original and a duplicate for fee processing)</i>		Assistant Commissioner for Patents Box Patent Application Washington, DC 20231	
2. <input checked="" type="checkbox"/> Applicant claims small entity status. <i>See 37 CFR 1.27.</i>			
3. <input checked="" type="checkbox"/> Specification [Total Pages 10] <i>(preferred arrangement set forth below)</i> <ul style="list-style-type: none"> <li>- Descriptive title of the Invention</li> <li>- Cross References to Related Applications</li> <li>- Statement Regarding Fed sponsored R &amp; D</li> <li>- Reference to sequence listing, a table, or a computer program listing appendix</li> <li>- Background of the Invention</li> <li>- Brief Summary of the Invention</li> <li>- Brief Description of the Drawings (<i>if filed</i>)</li> <li>- Detailed Description</li> <li>- Claim(s)</li> <li>- Abstract of the Disclosure</li> </ul>		7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program ( <i>Appendix</i> )	
4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C.113) [Total Sheets 6]		8. Nucleotide and/or Amino Acid Sequence Submission <i>(if applicable, all necessary)</i> <ol style="list-style-type: none"> <li><input type="checkbox"/> Computer Readable Form (CRF)</li> <li>Specification Sequence Listing on:           <ul style="list-style-type: none"> <li><input type="checkbox"/> CD-ROM or CD-R (2 copies); or</li> <li><input type="checkbox"/> paper number of pages</li> </ul> </li> <li><input type="checkbox"/> Statements verifying identity of above copies</li> </ol>	
5. Oath or Declaration [Total Pages 2] <ol style="list-style-type: none"> <li><input checked="" type="checkbox"/> Newly executed (original or copy)</li> <li><input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d))  <i>(for a continuation/divisional with Box 18 completed)</i> </li> <li><input type="checkbox"/> <b>DELETION OF INVENTOR(S)</b>            Signed statement attached deleting Inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).</li> </ol>		9. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s))	
6. <input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76		10. <input type="checkbox"/> 37 C.F.R. §3.73(b)Statement <input checked="" type="checkbox"/> Power of Attorney (when there is an assignee)	
		11. <input type="checkbox"/> English Translation Document ( <i>if applicable</i> )	
		12. <input type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations	
		13. <input type="checkbox"/> Preliminary Amendment	
		14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) <i>(Should be specifically itemized)</i>	
		15. <input type="checkbox"/> Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i>	
		16. <input type="checkbox"/> Nonpublication Request under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent	
		17. <input type="checkbox"/> Other:	

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

Continuation  Divisional  Continuation-in-part (CIP)

of prior application No: \_\_\_\_\_ / \_\_\_\_\_

Prior application Information: Examiner \_\_\_\_\_

Group Art Unit: \_\_\_\_\_

For CONTINUING or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

**19. CORRESPONDENCE ADDRESS**

<input checked="" type="checkbox"/> Customer Number or Bar Code Label		20350 (Insert Customer No. or Attach bar code label here)		or <input type="checkbox"/> Correspondence address below	
Name					
Address					
City	State	Zip Code			
Country	Telephone	(303) 571-4000		Fax	(303) 571-4321
Name (Print/Type)	Darin J. Gibby		Registration No. (Attorney/Agent)	38,464	
Signature			Date	March 14, 2003	

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

DE 7098143 v1

10/389733 PTO

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# FEE TRANSMITTAL for FY 2003

Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 415)

Complete If Known

Application Number	
Filing Date	
First Named Inventor	Andrew Citrynell
Examiner Name	
Group Art Unit	
Attorney Docket No.	040102-000100US

## METHOD OF PAYMENT (check all that apply)

Check  Credit Card  MoneyOrder  Other  None

Deposit Account:

Deposit Account Number 20-1430

Deposit Account Name Townsend and Townsend and Crew LLP

The Commissioner is authorized to: (check all that apply)

Charge fee(s) indicated below  Credit any overpayments

Charge any additional fee(s) during the pendency of this application

Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code (\$)	Fee Code (\$)		
1001 750	2001 375	Utility filing fee	375
1002 330	2002 185	Design filing fee	
1003 520	2003 260	Plant filing fee	
1004 750	2004 375	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$375)

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	-20** =	Fees from below		Fee Paid
		Extra Claims	Fee	
13	-20** = 0	X\$9		\$0
3	-3** = 0	X\$42		\$0
		X		

Large Entity	Small Entity	Fee Description
Fee Code (\$)	Fee Code (\$)	
1202 18	2202 9	Claims in excess of 20
1201 84	2201 42	Independent claims in excess of 3
1203 280	2203 140	Multiple dependent claim, if not paid
1204 84	2204 42	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)		(\$0)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity	Small Entity	Fee Description	Fee Paid
Fee Code (\$)	Fee Code (\$)		
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 410	2252 205	Extension for reply within second month	
1253 930	2253 465	Extension for reply within third month	
1254 1,450	2254 725	Extension for reply within fourth month	
1255 1,970	2255 985	Extension for reply within fifth month	
1401 320	2401 160	Notice of Appeal	
1402 320	2402 160	Filing a brief in support of an appeal	
1403 280	2403 140	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,300	2453 650	Petition to revive - unintentional	
1501 1,300	2501 650	Utility issue fee (or reissue)	
1502 470	2502 235	Design issue fee	
1503 630	2503 315	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Petitions related to provisional applications	
1808 180	1808 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	40
1809 750	2809 375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810 750	2810 375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801 750	2801 375	Request for Continued Examination (RCE)	
1802 800	1802 800	Request for expedited examination of a design application	
Other fee (specify)			

\*Reduced by Basic Filing Fee Paid SUBTOTAL (3)

(\$40)

## SUBMITTED BY

Complete (if applicable)

Name (Print/Type)

Darin J. Gibby

Registration No. (Attorney/Agent)

38,464

Telephone

303-571-4000

Signature

Date

March 14, 2003

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. DE 7098147 v1

**Application Data Sheet****Application Information**

Application Type:: Regular  
Subject Matter:: Utility  
Title:: REMOVABLE COOLING DEVICE AND  
INTEGRATED VESSELS  
Attorney Docket Number:: 040102-000100US  
Request for Early Publication:: No  
Request for Non-Publication:: No  
Total Drawing Sheets:: 6  
Small Entity?:: Yes  
Petition included?:: No  
Secrecy Order in Parent Appl.:: No

**Applicant No. 1 Information**

Applicant Authority Type:: Inventor  
Primary Citizenship Country:: US  
Status:: Full Capacity  
Given Name:: Andrew  
Family Name:: Citrynell  
Street of Mailing Address:: 264 Sunrise Lane  
City of Mailing Address:: Carbondale  
State of Mailing Address:: Colorado  
Country of mailing address:: US  
Zip Code of mailing address:: 81623

**Applicant No. 2 Information**

Applicant Authority Type:: Inventor  
Primary Citizenship Country:: US

Status:: Full Capacity  
Given Name:: Kimberly  
Middle Name:: Ann  
Family Name:: Miller  
Country of Residence:: US  
Street of Mailing Address:: 264 Sunrise Lane  
City of Mailing Address:: Carbondale  
State of Mailing Address:: Colorado  
Country of Mailing address:: US  
Zip Code of Mailing Address:: 81623

**Correspondence Information**

Correspondence Customer Number:: 20350

**Assignee Information**

Assignee Name:: Andrew Citrynell  
Street of mailing address:: 264 Sunrise Lane  
City of mailing address:: Carbondale  
State or Province of mailing address:: Colorado  
Country of mailing address:: US  
Postal or Zip Code of mailing address:: 81623

Attorney Docket No.: 040102-000100US

**PATENT APPLICATION**

**REMOVABLE COOLING DEVICE AND INTEGRATED VESSELS**

Inventor(s): Andrew Citrynell, a U.S. citizen, residing at  
264 Sunrise Lane  
Carbondale, Colorado 81623

Kimberly Ann Miller, a U.S. citizen, residing at  
264 Sunrise Lane  
Carbondale, Colorado 81623

Entity: Small

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, 8<sup>th</sup> Floor  
San Francisco, California 94111-3834  
Tel: 303-571-4000

**REMOVABLE COOLING DEVICE AND INTEGRATED VESSELS**

5

**BACKGROUND OF THE INVENTION**

[0001] This invention relates generally to the field of cooling beverages, and in particular to the use of removable cooling elements that may be integrated into various beverage containers. Such cooling elements are removable to permit them to be placed into a refrigerator freezer and reused.

10 [0002] Perhaps the most common method to cool beverages is with ice cubes. Another way to frost a glass in a freezer. However, there are many problems associated with these methods. For example, ice cubes dilute the beverage and can alter the taste of the beverage. Ice cubes may also be contaminated when touched, such as when placing them into the beverage. As another example, when frosting a glass in the freezer, the frost can be 15 contaminated by other products in the freezer, causing an odor. As a further example, the beverage may be contaminated by the water used to make the ice.

15 [0003] Hence, this invention is related to devices and techniques for cooling beverages which greatly reduces or eliminates such drawbacks.

20

**BRIEF SUMMARY OF THE INVENTION**

20 [0004] In one embodiment, the invention provides a beverage container that comprises a vessel having an interior that is adapted to hold a beverage. The vessel has a closed bottom end and an open top end, with the bottom end defining a cavity that is fluidly sealed from the interior of the vessel. The beverage container also includes a cooling element that is 25 configured to fit within the cavity. The beverage container further includes a base comprising a bottom member and a stem extending vertically upward from the bottom member. The base includes a connector that is configured to be coupled to the bottom end of the vessel and to enclose the cooling element within the cavity. In this way, a beverage held within the vessel may be cooled by the cooling element that is fluidly sealed from the interior 30 of the vessel. As such, the beverage may be cooled without contamination from the cooling element. Further, the cooling element may easily be removed and replaced with a fresh cooling element whenever needed.

[0005] In one aspect, the connector comprises a threaded end on the stem. The cavity may also include a threaded section so that the threaded end may be screwed up into the cavity using the threaded section. In this way, the exterior of the beverage container may contain a smooth morphology to make the container more aesthetically pleasing. At the same time the 5 beverage container may easily be separated into its component parts for cleaning, replacement of the cooling element, or the like.

[0006] In another aspect, the cavity may be generally cylindrical in geometry and extend vertically upward into the interior of the vessel. With such a configuration, the cooling element may comprise a cylinder that is filled with a cooling substance. In a further aspect, 10 both the connector and the vessel may be constructed of various materials, such as glass, hard plastics, glass coated with a hard plastic, and the like.

[0007] The beverage containers of the invention may be configured into a wide variety of shapes while still providing a suitable cooling element. For example, the vessel may be in the shape of a mug, a wine glass, a martini glass, a tumbler, a stein glass, a margarita glass, a 15 champagne glass, and the like.

[0008] In one particular embodiment, the bottom end of the vessel may define a generally hemispherical cavity that is fluidly sealed from the interior of the vessel. With such configuration, a generally hemispherical cooling element may be provided to fit within the cavity. In this way, the base may be coupled to the bottom end of the vessel to enclose the 20 cooling element within the cavity. The use of a generally hemispherical cooling element is advantageous in that it maximizes the surface area available for heat transfer. Such a cooling element is also particularly useful in beverage containers that have the shape of a tumbler, mug, or the like because the generally hemispherical cavity fits nicely within the interior of the vessel. Conveniently, the vessel may include threads while the bottom end of the vessel 25 also includes threads to permit the base to be screwed into the vessel.

[0009] Another feature of the invention is that it may include one or more trays having a plurality of holding regions for holding the cooling element. In this way, the tray may be placed into a freezer to simultaneously cool multiple elements.

[0010] In one aspect, the tray may include a plurality of recesses that are integrally formed 30 in the tray to define the holding regions. The recesses may be in the shape of the cooling element so that they may easily fit within the recesses. For example, the recesses may be semi-cylindrical, hemispherical, and the like.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Fig. 1 is a perspective view of one embodiment of a beverage container according to the invention.

[0012] Fig. 2 is an exploded side view of the container of Fig. 1.

5 [0013] Fig. 3 is an exploded side view of another embodiment of a container according to the invention.

[0014] Fig. 4 is a side view of another embodiment of a container according to the invention.

[0015] Fig. 4A is an exploded cross sectional side view of the container of Fig. 4.

10 [0016] Fig. 5 is a side view of still another embodiment of a beverage container according to the invention.

[0017] Fig. 6 is a side view of yet another embodiment of a beverage container according to the invention.

15 [0018] Fig. 7 is a side view of one particular embodiment of a beverage container according to the invention.

[0019] Fig. 8 is a side view of another embodiment of a beverage container according to the invention.

[0020] Fig. 9 is a side view of a further embodiment of a beverage container according to the invention.

20 [0021] Fig. 10 is a side view of yet a further embodiment of a beverage container according to the invention.

[0022] Fig. 11 is a side view of still a further embodiment of a beverage container according to the invention.

[0023] Fig. 12 is a top view of one embodiment of a tray for holding cooling elements according to the invention.

25 [0024] Fig. 13 is a top view of another embodiment of a tray for holding cooling elements according to the invention.

## DETAILED DESCRIPTION OF THE INVENTION

30 [0025] The invention provides various beverage containers that may be used with removable and reusable cooling elements. The containers each include a vessel for holding the liquid and a cavity for holding the cooling element. The cavity is sealed from the interior of the vessel but also extends up into the vessel to provide a cooling effect. The cavity may have a variety of shapes configured to maximize heat transfer away from the liquid. Such

shapes may include cylindrical, hemispherical, pyramid shaped, arcuate, square, triangular and the like. The cavity may conveniently have a shape that is similar to the cooling element, although that is not necessary. The wall thickness may also be minimized to maximize heat transfer. The cooling element may contain any substance that can be cooled and serve to absorb heat. Examples include water, gels, Blue Ice® coolant, any non-toxic re-freezable substance, and the like. Alternatively, the cooling element may be a solid substance, such as a metal rod, a piece of ice, or the like. The cooling element may be held in the cavity by a base that has one or more connectors to connect the base to the vessel. Examples of connectors include threads, clips, snaps, screws, press fits and the like. The base may be screwed, twisted, locked or snapped into place. One advantage of using threads is that the vessel may be coupled to the base utilizing relatively few threads. In this way, the two components may be locked together using a single twist. Further, such threads permit the two components to be easily unscrewed, even when the vessel is filled with liquid so that the cooling element may easily be replaced. Few threads also reduce the chances of having the vessel or the base break. Further, with few threads, the beverage container remains symmetrical when assembled, while still being easy to fit together.

[0026] Hence, the invention provides a removable cooling element for cooling beverages that may be placed into a regular refrigerator freezer between uses. The removable device when frozen may be placed into an upper portion of the vessel, and a bottom portion may then be attached to the upper portion. The device easily fits into the vessel, which may be constructed of a wide variety of materials, such as glass, plastic or the like. The base of the beverage container may be tubular, cubical, semicircular, pyramidal, or the like, and may be connected to the bottom of the vessel by a stem or end portion that attaches to the bottom of the vessel and seals in the cooling element. When threads are used, they may be constructed of a hard plastic or glass with a hard plastic coating. As another example, one of the threaded elements may be a hard plastic while the other is made of glass, or both may be of a hard plastic. The vessels may be made of glass, plastic, a disposable plastic, or the like. As one specific example, the male threading may be on the base or stem and may be constructed from a hard plastic or glass with a hard plastic coating on a glass stem. Such materials serve to seal the cooling device into the integrated vessel and base to cool the beverage without ever contacting it. As such, the cooling device may be replaced even while the fluid is in the vessel to provide additional cooling.

[0027] The cooling element may also be made of a hard plastic, and the re-freezable substance may be of any color. Similarly, the vessel may also be of any color.

[0028] When the cooling device is removed, it may be washed and then kept in the freezer in an appropriate cooling tray. The tray may have regions that are shaped to hold the particular cooling element. Because the removable cooling element is never in contact with the interior of the vessel, it is always hygienic.

5 [0029] Such a system provides a variety of advantages. For example, as just described, the beverage is hygienically cooled using a reusable cooling device that never contacts the beverage. The cooling elements fit neatly into a tray and take up little room in the freezer, usually less than an ordinary ice tray.

[0030] Further, the beverage container may be separated into parts to facilitate washing.

10 For example, the stem may be separated from the vessel and separately placed into a dishwashing machine with a reduced risk of being broken.

[0031] The beverage container may also come in an assortment of colors to make identification of the container simple, thus resulting in less chance of the spreading of germs by drinking from another's glass. Different colors may also be used for the cooling element, 15 the fluid within the cooling element and the cavity used to hold the cooling element.

[0032] The extension into the interior of the vessel takes up extra volume. In this way, restaurants and bars may increase their profits per drink.

[0033] The beverage also does not get diluted with melting ice, and there is no contamination from the ice/odors or impurities in the water. This is also true with frosted 20 glasses, where the frost can have odors or contamination from the water used to make frost.

[0034] Also, since no ice cubes are placed into the beverage, there is no chance of contamination from a person's hand used to place the ice into the beverage. In fact, no human contact with the beverage is ever experienced.

[0035] Referring now to Fig. 1, one embodiment of a beverage container 10 will be 25 described. Container 10 comprises a base 12 and a vessel 14 having an open top end 16 and a closed bottom end 18. Formed in bottom end 18 is a cavity 20 that extends up into the interior 22 of vessel 14. Cavity 20 is cylindrical in geometry and is sized to receive a cylindrical cooling element 24. The bottom of cavity 20 has threads 26 for receiving a threaded end 28 of a stem 30 that is part of base 12. In this way, cooling element 24 30 containing a cooling substance 25 may be inserted into cavity 20, and threaded end 28 of stem 30 may be screwed into threads 26 to completely seal cooling element 24 within cavity 20. One advantage of using internal threads within cavity 20 is that a continuous smooth surface is provided at the interface between vessel 14 and stem 30. As such, container 10 has the appearance of a traditional wine glass, except for the presence of cooling element 24 that

extends into interior 22. However, this has the advantage of reducing the volume of interior 22 so that restaurants and bars can reduce the amount of beverages served while still charging the same amount.

[0036] Another advantage is that the cooling element 24 is almost entirely exposed to interior 22 to maximize heat transfer. Further, since cooling element 24 is sealed from the beverage, no contamination of the beverage by a coolant occurs. Container 10 is also aesthetically pleasing and can be fashioned in essentially any shape or configuration, including conventional shapes and designs as described hereinafter.

[0037] In use, cooling element 24 is placed into a cold location, such as a refrigerator or freezer. When ready to pour a beverage, cooling element 24 is removed and placed into cavity 20. Threaded end 28 is then screwed into cavity 20 until it is unable to turn and a smooth surface at the joint is formed. A beverage is then poured into vessel 14 where it is cooled by cooling element 24. At any time, base 12 may be unscrewed and cooling element 24 replaced with another one.

[0038] Referring now to Fig. 3 another embodiment of a beverage container 40 will be described. Container 40 is essentially identical to container 10 except that container 40 is a martini glass and has a different shaped vessel 42. As such, container 40 is labeled with the same reference numerals for elements that are the same as those used with container 10. When stem 30 is screwed into cavity 20, vessel 42 has a conical shape that is continuous at the interface between vessel 42 and stem 30.

[0039] Figs. 4 and 4A illustrate a beverage container 50 in the shape of a mug. Container 50 comprises a vessel 52 having an open top 54 and a closed bottom 56 to form an interior 58. Extending up onto the interior 58 is a hemispherical cavity 60 to hold a hemispherical cooling element 62. This shape maximizes the coolable surface wherein interior 58 to maximize cooling. Conveniently, a handle 64 may be coupled to vessel 52.

[0040] Bottom 56 includes internal threads 66 to mate with threads 68 on a base 70 having an outer edge 72. After cooling element 62 is placed into interior 58, base 70 is screwed into bottom 56 until edge 72 is flush with vessel 52 as shown in Fig. 4. Hence, container 50 has the shape of a traditional mug while also containing a cooling element that is configured to maximize heat transfer. In addition, container 50 includes all of the benefits of the other containers described herein.

[0041] Figs. 5-10 describe various other embodiments of beverage containers that are constructed in a manner similar to the other containers described herein. As such, the containers in Figs. 5-10 are labeled with similar elements followed by "a" through "g". Fig. 5

5 illustrates a white wine glass 70, and Fig. 6 illustrates a champagne glass 80. Fig. 7 illustrates a Stein glass 90, and Fig. 8 illustrates another wine glass 100. Fig. 9 illustrates a margarita glass 110, and Fig. 10 illustrates another martini glass 120. Fig. 11 illustrates a tumbler 130 that is similar to mug 50 of Fig. 4 without a handle. Other types of glasses include red wine glasses, brandy snifter glasses, along with essentially any other type of glass or beverage container.

10 [0042] Fig. 12 illustrates one embodiment of a tray 140 having a plurality of recessed regions 141 that may be semi-cylindrical in geometry for holding a set of cylindrical cooling elements 142. In this way, multiple cooling elements 142 may simultaneously be placed into a freezer while using minimal space. When a beverage container needs a new cooling element, it may simply be removed from tray 140 and placed into the cavity as previously described. The old cooling element may then be placed onto tray 140 which is placed into the freezer. Further, it will be appreciated that tray 140 may have any shape of indentation needed to match the shape of the cooling element, including any of the shapes described 15 herein.

15 [0043] Fig. 13 illustrates an alternative tray 150 having a plurality of hemispherical recesses 152 for receiving hemispherical cooling elements. Tray 150 may be used in a manner similar to tray 140.

20 [0044] The invention has now been described in detail for purposes of clarity and understanding. However, it will be appreciated that certain changes and modifications may be practiced within the scope of the appended claims.

WHAT IS CLAIMED IS:

1           1. A beverage container, comprising:

2           a vessel having an interior that is adapted to hold a beverage, wherein the  
3 vessel has a closed bottom end and an open top end, and wherein the bottom end defines a  
4 cavity that is fluidly sealed from the interior of the vessel;

5           a cooling element that is configured to fit within the cavity;

6           a base comprising a bottom member and a stem extending vertically upward  
7 from the bottom member, wherein the base includes a connector that is configured to be  
8 coupled to the bottom end of the vessel and to enclose the cooling element within the cavity.

1           2. A container as in claim 1, wherein the connector comprises a threaded

2 end on the stem, wherein the cavity includes a threaded section, and wherein the threaded end  
3 is configured to be screwed up into the cavity using the threaded section.

1           3. A container as in claim 1, wherein the cavity is generally cylindrical in

2 geometry and extends vertically upward into the interior of the vessel, and wherein the

3 cooling element comprises a cylinder that is filled with a cooling substance.

1           4. A beverage container as in claim 2, wherein the connector and the

2 vessel are constructed of a material selected from a group consisting of glass, hard plastic,  
3 and glass coated with hard plastic.

1           5. A container as in claim 1, wherein the vessel has a shape selected from

2 a group consisting of a mug, a regular wine glass, a red wine glass, a white wine glass, a  
3 martini glass, a tumbler, a stein glass, a margarita glass, a brandy snifter and a champagne

4 glass.

1           6. A beverage container comprising:

2           a vessel having an interior that is adapted to hold a beverage, wherein the

3 vessel has a closed bottom end and an open top end, and wherein the bottom end defines a  
4 generally hemispherical cavity that is fluidly sealed from the interior of the vessel;

5           a generally hemispherical cooling element that is configured to fit within the

6 cavity;

7           a base having a connector that is configured to be coupled to the bottom end of

8 the vessel and to enclose the cooling element within the cavity.

1                   7.       A beverage container as in claim 6, wherein the bottom end includes a  
2 generally hemispherical surface that partially defines the interior of the vessel.

1                   8.       A beverage container as in claim 7, wherein the connector comprises  
2 threads on the base, and wherein the bottom end of the vessel includes threads to permit the  
3 base to be screwed into the vessel.

1                   9.       A beverage container kit comprising:  
2                   a vessel having an interior that is adapted to hold a beverage, wherein the  
3 vessel has a closed bottom end and an open top end, and wherein the bottom end defines a  
4 cavity that is fluidly sealed from the interior of the vessel;  
5                   a cooling element that is configured to fit within the cavity;  
6                   a base comprising a connector that is configured to be coupled to the bottom  
7 end of the vessel and to enclose the cooling element within the cavity;  
8                   a tray having a plurality of holding regions for holding cooling elements,  
9 whereby the tray may be placed in a freezer to cool the cooling elements.

1                   10.      A kit as in claim 9, wherein the tray includes a plurality of recesses  
2 integrally formed in the tray to define the holding regions.

1                   11.      A kit as in claim 10, wherein the recesses are in a shape selected from  
2 a group consisting of semi-cylindrical and semi-spherical.

1                   12.      A kit as in claim 9, wherein the base further comprises a bottom  
2 member and a stem extending vertically upward from the bottom member.

1                   13.      A kit as in claim 12, wherein the connector comprises a threaded end  
2 on the stem, wherein the cavity includes a threaded section, and wherein the threaded end is  
3 configured to be screwed up into the cavity using the threaded section.

**REMOVABLE COOLING DEVICE AND INTEGRATED VESSELS****ABSTRACT OF THE DISCLOSURE**

In one embodiment, a beverage container comprises a vessel having an interior that is adapted to hold a beverage. The vessel has a closed bottom end and an open top end. The bottom defines a cavity that is fluidly filled from the interior of the vessel. A cooling element is configured to fit within the cavity. A base comprises a bottom member and a stem extending vertically upward from the bottom member. The base includes a connector that is configured to be coupled to the bottom end of the vessel and to enclose the cooling element within the cavity.

DE 7096693 v1

**DECLARATION**

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name; I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: REMOVABLE COOLING DEVICE AND INTEGRATED VESSELS, the specification of which was filed on \_\_\_\_\_ and accorded Application No. \_\_\_\_\_

I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56. I claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

Application No.	Filing Date

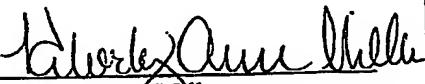
I claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application No.	Date of Filing	Status

Full Name of Inventor 1:	Last Name: Citynell	First Name: Andrew	Middle Name or Initial:
Residence & Citizenship:	City: Carbondale	State/Foreign Country: Colorado	Country of Citizenship: US
Post Office Address:	Post Office Address: 264 Sunrise Lane	City: Carbondale	State/Country: US Postal Code: 81623
Full Name of Inventor 2:	Last Name: Miller	First Name: Kimberly	Middle Name or Initial: Ann
Residence & Citizenship:	City: Carbondale	State/Foreign Country: Colorado	Country of Citizenship: US
Post Office Address:	Post Office Address: 264 Sunrise Lane	City: Carbondale	State/Country: US Postal Code: 81623

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so

made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature of Inventor 1	Signature of Inventor 2
 Andrew Citryne	 Kimberly Ann Miller
Date: 3/13/03	Date: March 13, 2003

DE 7097532 v1

Please type a plus sign (+) inside this box → **[+]**

PTO/SB/81 (02-01)

Approved for use through 10/31/2002. OMB 0651-0035  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>POWER OF ATTORNEY OR AUTHORIZATION OF AGENT</b>	<b>Application Number</b>	
	<b>Filing Date</b>	
	<b>First Named Inventor</b>	Andrew Citrynell
	<b>Title</b>	REMOVABLE COOLING DEVICE AND INTEGRATED VESSELS
	<b>Group Art Unit</b>	
	<b>Examiner Name</b>	
	<b>Attorney Docket Number</b>	040102-000100US

I hereby appoint:

Practitioners at Customer Number  
OR

20350

Place Customer  
Number Bar Code  
Label here

Practitioner(s) named below:

Name	Registration Number

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Please change the correspondence address for the above-identified application to:

The above-mentioned Customer Number.  
OR

Firm or  
Individual Name

Address

Address

City

State

ZIP

Country

Telephone

(303) 571-4000

Fax

(303) 571-4321

I am the:

Applicant/Inventor.  
 Assignee of record of the entire interest. See 37 CFR 3.71.  
*Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).*

SIGNATURE of Applicant or Assignee of Record

Name

Andrew Citrynell

Signature

Andrew Citrynell

Date

3/13/03

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.  
Submit multiple forms if more than one signature is required, see below\*.

\*Total of \_\_\_\_\_ forms are submitted.

Q

Burden Hour Statement: This form is estimated to take 3 minutes to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. DE 7097535 v1

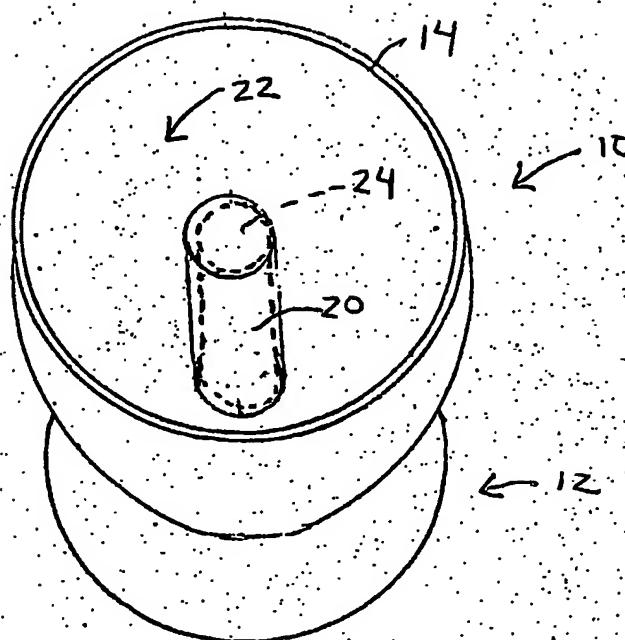


FIG:1

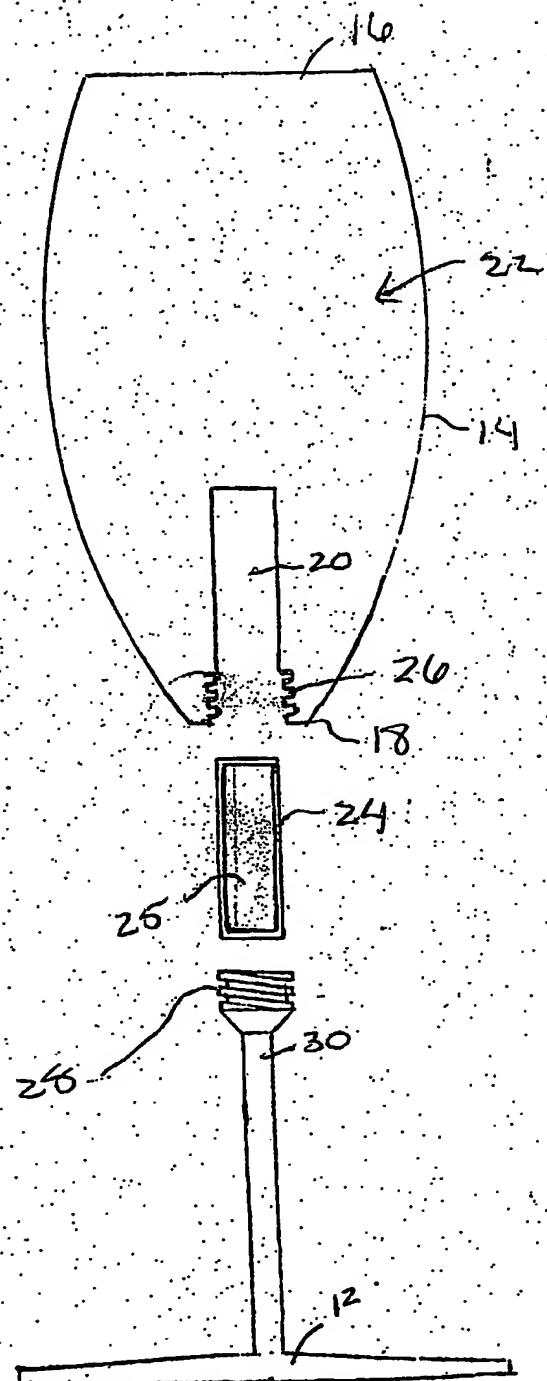


FIG.2

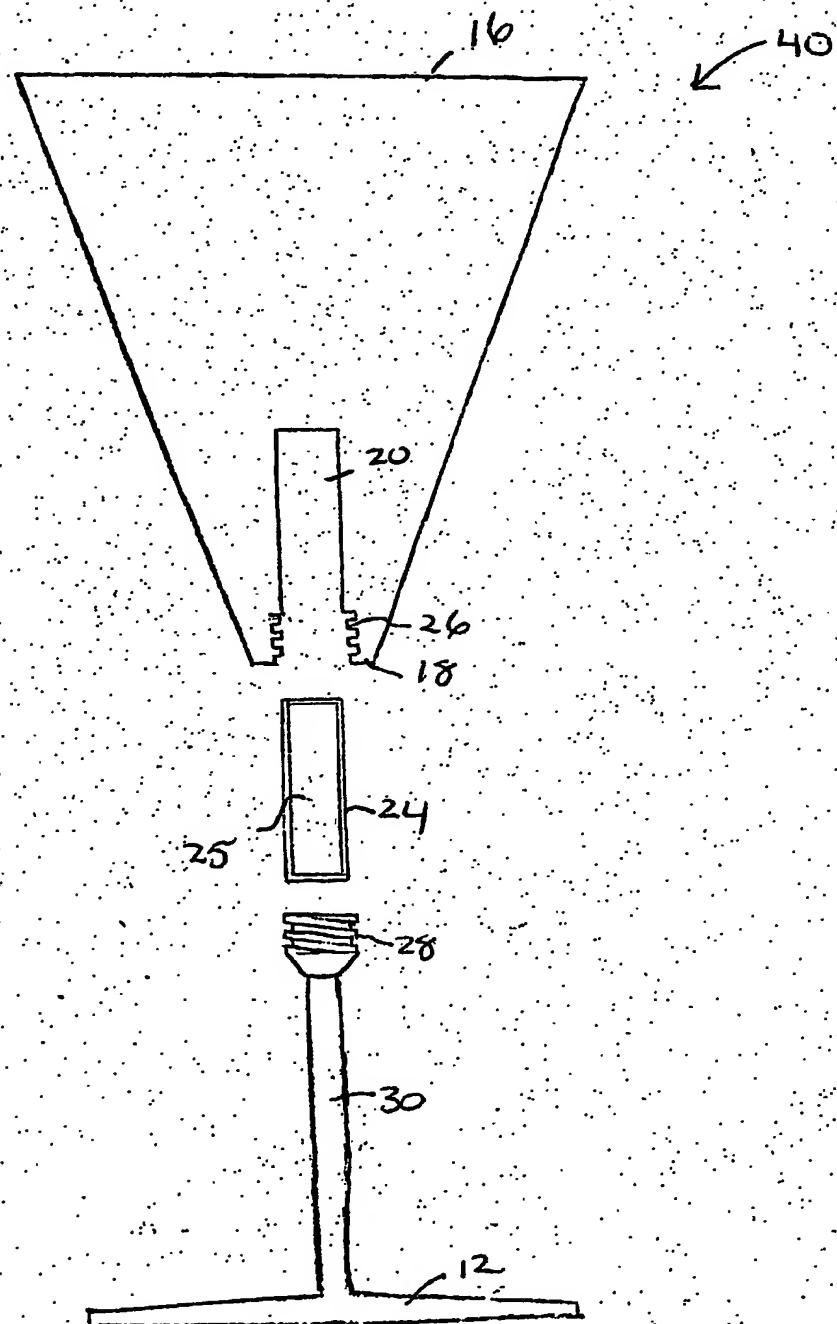


FIG.3

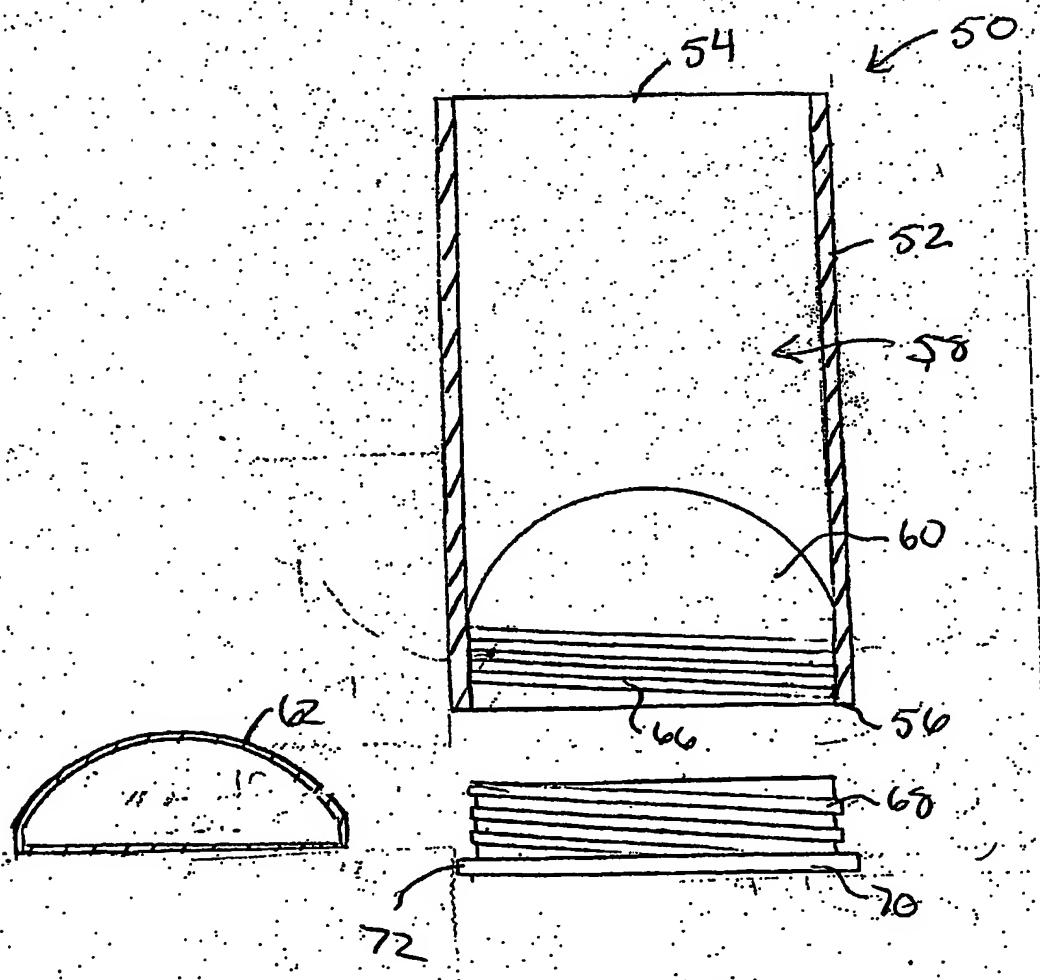


FIG. 4A

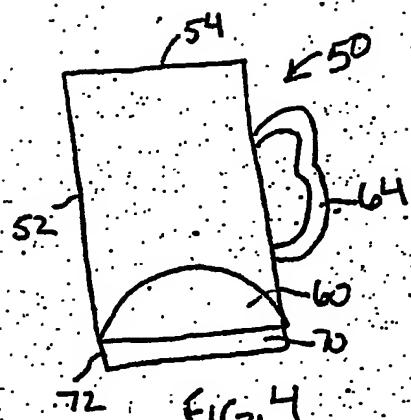


FIG. 4

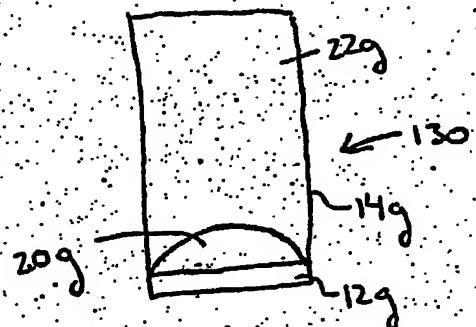


FIG. 11

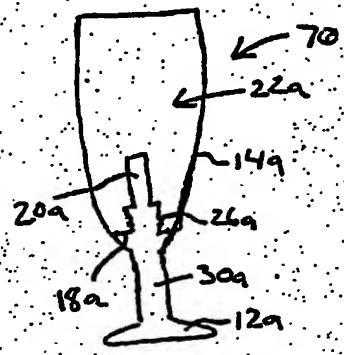


FIG. 5

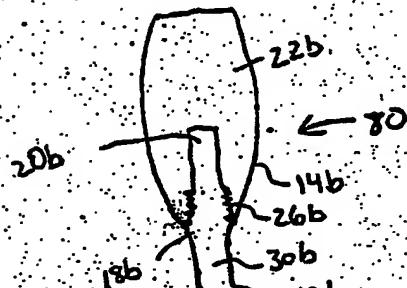


FIG. 6

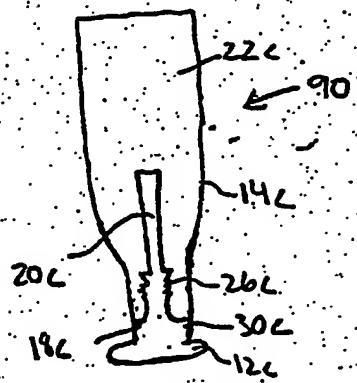


FIG. 7

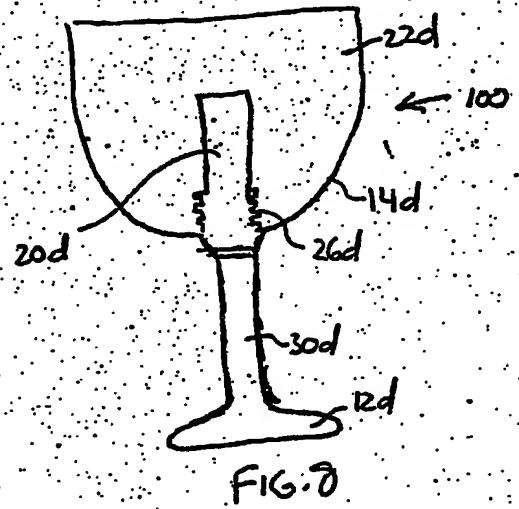


FIG. 8

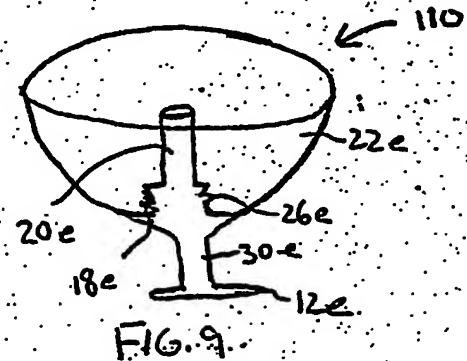


FIG. 9

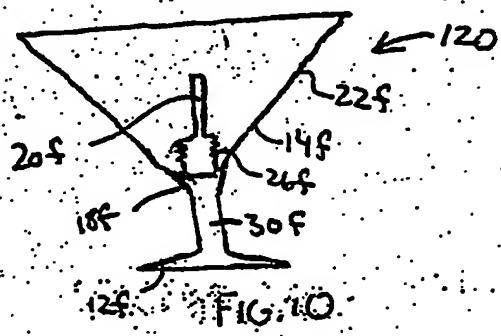


FIG. 10

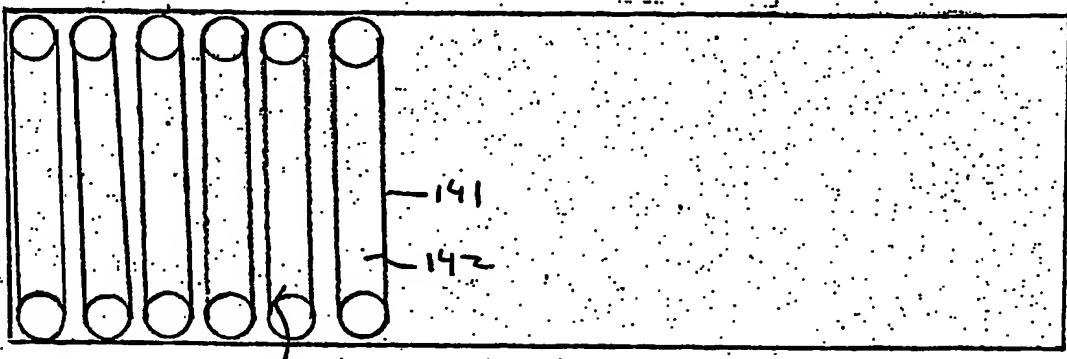


FIG. 12

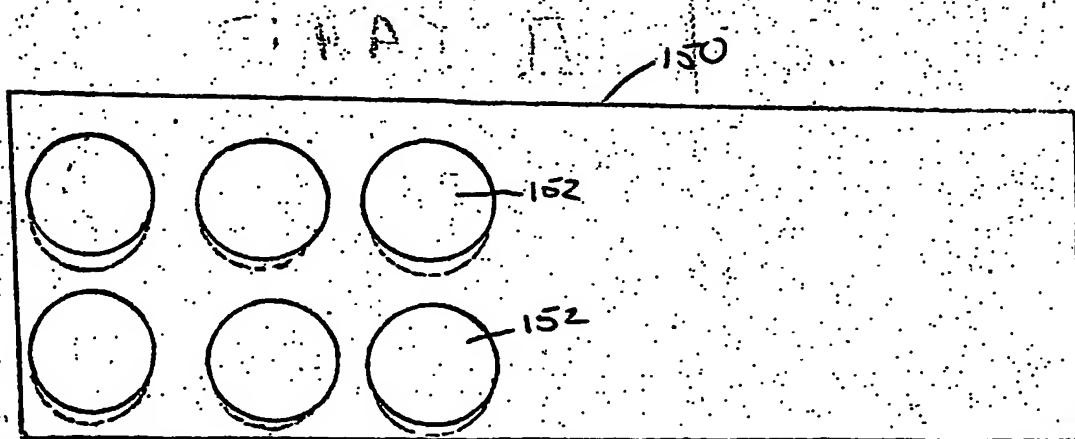


FIG. 13

This Page is inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record

## BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:



BLACK BORDERS



IMAGE CUT OFF AT TOP, BOTTOM OR SIDES



FADED TEXT OR DRAWING



BLURED OR ILLEGIBLE TEXT OR DRAWING

SKEWED/SLANTED IMAGES

COLORED OR BLACK AND WHITE PHOTOGRAPHS

GRAY SCALE DOCUMENTS

LINES OR MARKS ON ORIGINAL DOCUMENT

REPERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY

OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images  
problems checked, please do not report the  
problems to the IFW Image Problem Mailbox**